CAPITA

Leekbrook, Staffordshire

Transport Assessment

February 2014

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Quality Management

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1. Introduction

1.1 Project Description

Capita Limited has been commissioned by Moorland & City Railways Ltd (MCR) to undertake a Transport Assessment (TA) to accompany a planning application for Leekbrook, Staffordshire. It is proposed that the development site will consist of 89 dwellings.

There are also proposed plans to accommodate a new railway station in the north west of the site; this is part of a wider aspiration for the Churnet Valley Railway (CVR) to create the UK's biggest heritage railway network by expanding services into Leek and as far as Stoke. Services currently run between Leekbrook (just south of the proposed development site) and Kingsley & Froghall; although, services do extend to Moneystone Quarry just north of Oakamoor, however, this is not regularly used. It is proposed that this housing development is an enabling proposal for the railway; the revenue from the sale of the land will be used to extend the railway into Leek. It is one of two phases in the Moorland & City Railways' project to reconnect Leek with the national railway network. It is also proposed that there will be a cycleway and footpath from the development site into Leek.

Staffordshire County Council (SCC) is the Local Highway Authority (LHA) whilst Staffordshire Moorlands District Council (SMDC) is the local planning authority.

In line with best practice, the Transport Assessment will broadly follow the procedures recommended in the publication 'Guidance on Transport Assessment' published by the Department for Transport (DfT 2007).

1.2 Discussions with SCC

Extensive discussions have taken place with SCC's David Plant since Moorland & City Railways Ltd first looked at proposals for the site. These discussions have remained ongoing as part of this current proposal.

Through these discussions, the LHA have raised a number of concerns which are provided in **Appendix A** and broadly summarised below as follows:

- Concerns on the current standard of the existing road providing access into the site
- Concerns on the restricted carriageway width underneath the railway bridge particularly to fire appliances and refuse vehicle
- Concerns on the availability of land for the construction of an access road between the existing alignment of Leekbrook Way and the site
- Concerns on footpath and connectivity of the site to external footpath network.

In light of this approach and in order to allow this report to be read as a standalone document, work included in the previous Transport Assessment during pre-application consultation has been reproduced within this report as necessary.

1.3 Purpose of the Report

The purpose of this report is to provide Staffordshire County Council LHA and Staffordshire Moorlands District Council the local planning authority with the necessary information to support the proposals and consider their transport implications. In order to provide this information, this report has been produced in 7 Chapters including this introduction. The remainder of the report will take the following structure:

Chapter 2 – considers relevant policies in relation to the application site

Chapter 3 – reviews existing conditions and provides details of the study area from a highways perspective and collision data analysis

Chapter 4 – details the current development proposals and in particular provides a detailed response to the concerns raised during the pre-application consultations

Chapter 5 – considers the accessibility of the site by the sustainable modes and sustainable transport appraisal

Chapter 6 – provides details of the traffic impact assessment in relation to the proposed developments impact

Chapter 7 – summary and conclusion

2. Policy Considerations

2.1 Policy Review

Legislation and policy play an important role in shaping and guiding new developments. This section of the report reviews relevant documents, including national and local transport policy.

2.1.1 National Policy

2.1.1.1 National Planning Policy Framework (NPPF)

The Government released the National Planning Policy Framework on 27th March 2012 which replaces all previous planning policy in England with immediate effect. The framework states that local planning authorities should support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport. Developments should be located and designed where practical to:

- accommodate the efficient delivery of goods and supplies;
- give priority to pedestrians and cycle movements, and have access to high quality public transport facilities;
- create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones;
- incorporate facilities for charging plug-in and other ultra-low emission vehicles; and
- consider the needs of people with disabilities by all modes of transport.

Where developments generate significant amounts of movement, decisions should take account of whether:

- the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
- safe and suitable access to the site can be achieved for all people; and
- improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

2.1.2 Local Policy

2.1.2.1 Staffordshire Local Transport Plan 2011

The proposed development supports Staffordshire's Local Transport Plan 2011 by meeting its objectives. Namely:

- *'Supporting Growth and Regeneration'* by providing opportunities for residents to access jobs.
- *'Making Transport Easier to Use and Places Easier to Get to'* by making 'access for all' a key consideration when planning new employment sites, services and facilities.
- *'Reducing Road Transport Emissions and Their Effects on the Highway Network*' by reducing emissions from road transport.
- '*Improving Health and Quality of Life'* by encouraging active travel and maximising opportunities for transport to positively contribute towards people's quality of life.
- '*Respecting the Environment*' by minimising the impact of transport on the environment.

2.1.2.2 Staffordshire Moorlands Core Strategy

The Staffordshire Moorlands Core Strategy is currently at an advanced stage of production and will, when adopted, replace the Staffordshire Moorlands Local Plan and become the primary planning policy document determining where in the District future development will take place to 2026.

The strategy seeks to promote Leek's special character and heritage and strengthen its role as a visitor destination by increasing tourist opportunities for visitors through the development of new tourist attractions linked to the Churnet Valley. Policy SS7, as modified, states that the Churnet Valley is identified as an area for sustainable tourism and supports measures to improve connectivity and accessibility to and within the Churnet Valley by sustainable transport means.

Paragraph 8.1.74 states that 'the Churnet Valley' is a major development and management initiative which will provide a strong focus for sustainable rural regeneration across the District and a significant sub-regional asset as well as complementing and easing pressures on the neighbouring Peak District National Park. Measures to improve access by public transport, walking and cycling into the countryside will be supported'.

2.2 Previous Planning Applications

Interrogations of Staffordshire County Councils and Staffordshire Moorlands District Councils website planning portals have shown that there have been no planning applications previously submitted for the site.

2.3 Conclusion

The review of relevant policy documentation has demonstrated that the proposals will support a number of strategic and local planning objectives. The development will help to regenerate the existing area whilst encouraging economic prosperity and promoting the use of sustainable transport modes through design and the implementation of a travel plan.

3. Site Description and Existing Conditions

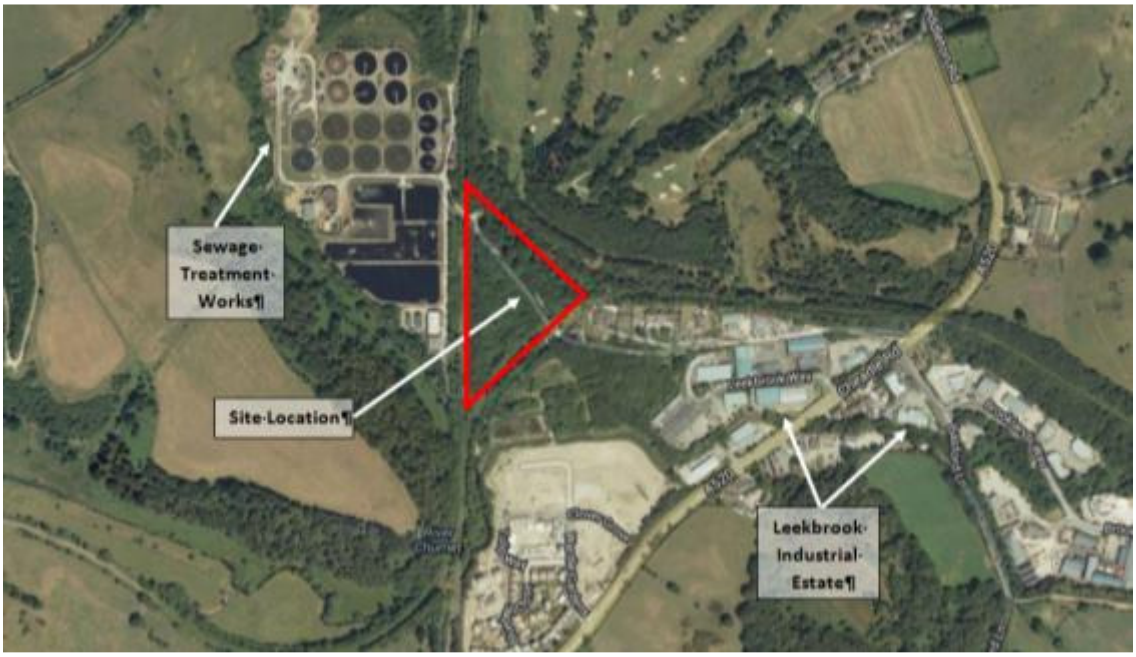
3.1 Introduction

This section describes the existing site in context with the local highway network and associated infrastructure.

3.2 Site Location

The proposed development is located in Leekbrook, south of Leek, Staffordshire. The site is bounded by both existing heritage and disused railway lines. Severn Trent Sewage Treatment Works lies to the west and a residential development lies to the south of the proposed development site; see Figure 3.1 below.

Figure 3.1 – Site Location Plan



The proposed development is located off Leekbrook Junction. Leekbrook Junction is an existing single track providing access to a small number of existing houses and small industrial units; see Figure 3.2 below. Leekbrook Junction is accessed off Cheadle Road (A520) which links Leek to Stoke-on-Trent and Stone.

Figure 3.2 – Existing Access Track / Leekbrook Junction

3.3 Existing Site Information

The site is located within the Leek South ward of Staffordshire and is currently served off Leekbrook Junction which is a single lane access track, serving a small number of existing houses and small industrial units. There is one access point into the proposed development site, which is under a railway bridge at the western end of Leekbrook Junction. There is a height restriction of 3.5m and a carriageway restriction of 2.8m kerb to kerb as illustrated in Figure 3.3 overleaf.

Figure 3.3 – Site Access

Ultimately, the bridge can be removed and the road through it widened if need be. MCR owns land on either side to enable this to be done. However, the current structure is an attractive original brick arch bridge and its demolition for purely technical reasons is likely to conflict with heritage concerns and significantly impact on scheme viability. Therefore, these constraints would have to be resolved by innovative ways to enable the development to be accessed by necessary services such as Fire and Rescue appliances and refuse collection as discussed in detail in Chapter 4.

3.4 Baseline Transport Data

3.4.1 Local Roads Network

At the eastern end of Leekbrook Junction, the access track joins the A520 Cheadle Road at a priority controlled T-junction; see Figure 3.4 overleaf. However, there are no road markings or associated signs with access to Leekbrook Junction provided by way of a footway crossing.

Figure 3.4 – Junction of Cheadle Road (A520) and Leekbrook Junction

The A520 Cheadle Road is a main arterial link through the area connecting to the A53 in Leek and the A34 in Stone. The A520 is a single carriageway road and is subject to a 40mph speed limit through Leekbrook.

3.4.2 Committed Developments

No committed development schemes that will impact the proposed development have been identified. However, Basford Lane industrial estate had planning permission for an extension which also included provision of a signalised junction at Basford Lane/A520 Cheddleton Road (06/00548). This has expired but if the proposal is brought back, signalisation will likely still be required.

3.4.3 Committed Infrastructure

No committed infrastructure schemes that will impact the proposed development have been identified aside from the Basford Lane/A520 Cheddleton Road signalisation as mentioned above.

3.4.4 Air Quality Management Areas

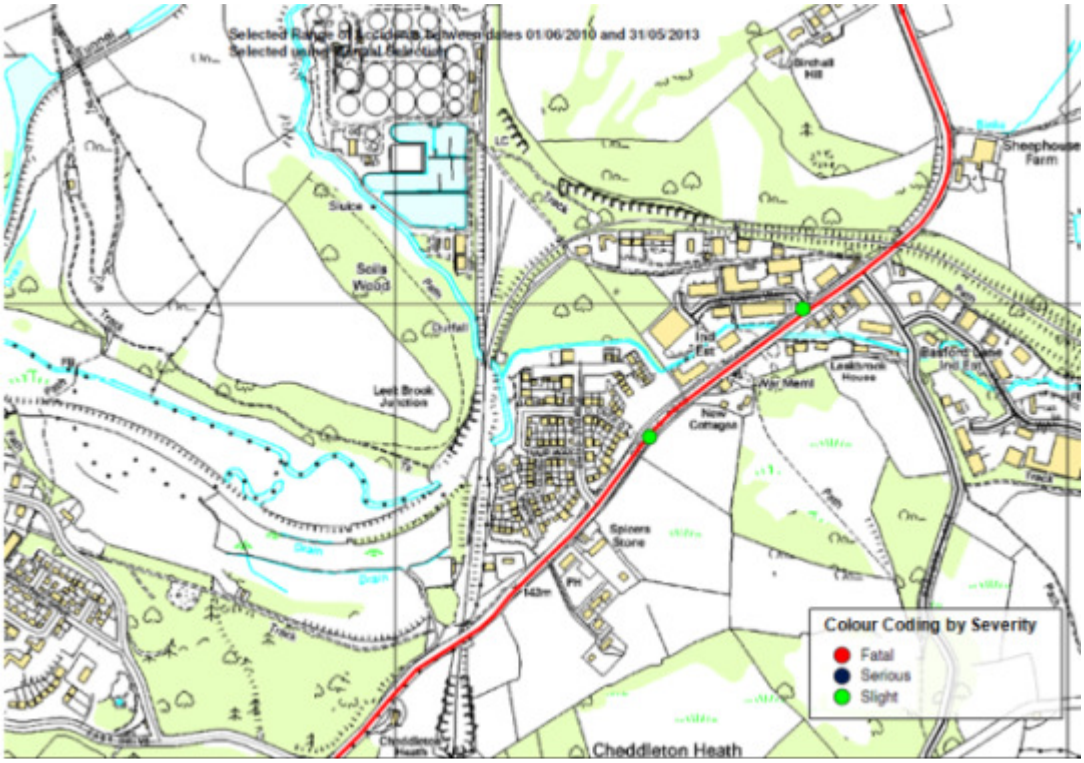
No Air Quality Management Areas (AQMA) have been declared within Staffordshire Moorlands District Council.

3.5 Personal Injury Accident Data

The purpose of this section of the report is to summarise and provide an analysis of the reported road traffic accidents which have involved personal injury within a close proximity of the proposed development site.

The personal injury accident road traffic data was obtained through Staffordshire County Council for the full three year period June 2010 to May 2013. The accident information shows a total of 2 accidents have been recorded in the three year period. Of the 2 accidents, the split by severity shows there have been 2 slight, 0 serious and 0 fatal accidents. The full accident report is provided in **Appendix B**. See Figure 3.5 below for a location plan of each accident in relation to the proposed development site.

Figure 3.5 – Location Plan for Accidents (June 2010 – May 2013)



There have been two recorded accidents on Cheadle Road (A520). Both of these accidents have resulted in slight injuries and occurred in 2011. An overview of both accidents is shown below:

- One accident involved a vehicle turning into Leekbrook Way from Cheadle Road being struck by a vehicle travelling southwest to northeast due to a failure to judge the other persons path or speed.
- One accident approximately 113 metres northeast of the junction with Wardle Gardens occurred due to exceeding the speed limit and being impaired by alcohol.

A review of the local accident data for the previous three years demonstrates that the surrounding area close to the proposed development does not experience any unusual accident patterns. As such, the analysis of the accident details does not give any cause for concern.

4. Proposed Development

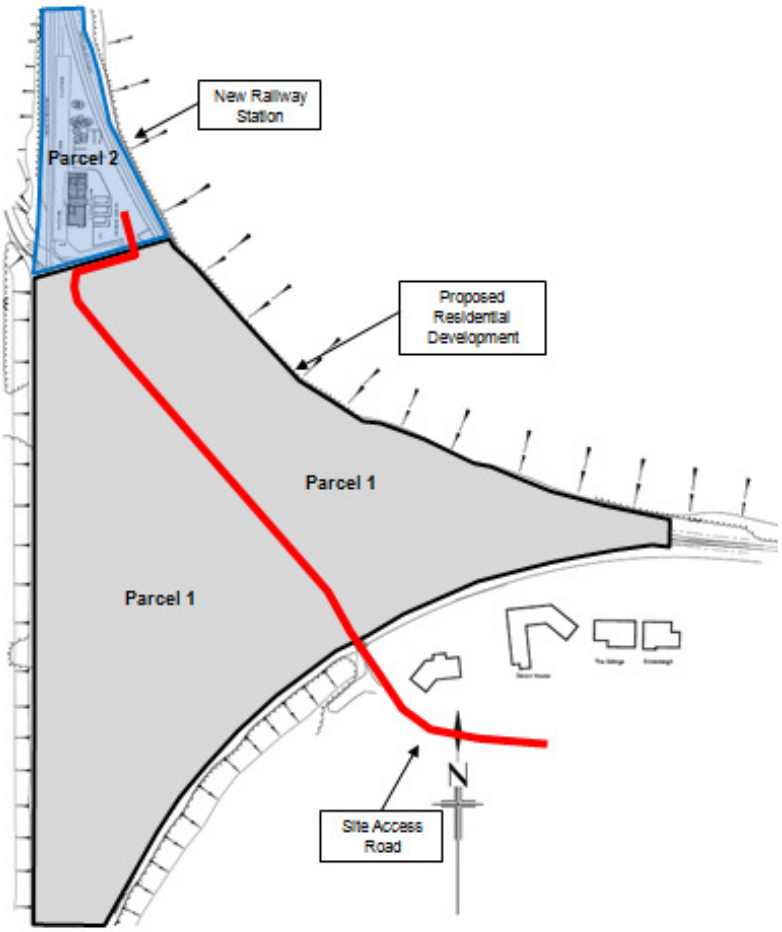
4.1 Introduction

This section describes the proposed development composition and outlines the impacts likely to be generated by the proposals.

4.2 Scale of Development

The area of the site bounded by the railway lines is approximately 24,500m². The total development site comprises of two parcels of land: this Transport Assessment is for both parcels. This Transport Assessment will support an outline application for both parcel 1 - the residential development; and parcel 2 - a new railway station in the north west of the site; Figure 4.1 below illustrates the proposed site division areas.

Figure 4.1 – Proposed Site Division Areas



The proposed development incorporates:

- 89 dwelling unit types with associated parking are proposed within the application site.
- A small station facility with integral retail facility for use by residents of the two housing developments at Leekbrook. This will provide rail connections eventually to Leek, Stoke and along the Churnet Valley and Cauldon lines.
- The reinstatement of the original railway lines within the site comprising part of the through Churnet Valley Route (CVR) and the former north curve. In so far as this is located within the Moorland and City railway infrastructure will be reinstated using the original statutory powers and therefore does not form part of the planning application.

4.3 Leekbrook Station

The rail strategy for the new line is still being developed. The proposed Leekbrook station is intended as an aid to general sustainability and connectivity for Leekbrook residents and businesses. The Leekbrook station would only be used as a local halt on an eventual commercial network linking Leek with Alton Towers and the rest of the Churnet Valley and also accessing Stoke on Trent and the West Coast Main Line.

A separate heritage railway line will be developed from the proposed Leekbrook Station for touristic purposes. Tourist visitors will unlikely be picked up at Leekbrook Station and heritage services will almost certainly not stop there.

As far as commercial services are concerned, as soon as the new Leek and Leekbrook stations are operational, commuter/local services will be run between Leek and Froghall, stopping at Leekbrook as well as the currently operational CVR stations (Cheddleton, Consall and Froghall). These through services would eventually reach Stoke and Alton Towers when the lines to those locations are opened. It can be assumed that the main destinations from Leekbrook would be Leek and Stoke.

The market for Leekbrook station users is very much the immediate area and hence the limited amount of parking spaces reinforcing its local (with most users walking to it) rather than parkway status. Immediate uses of the station would be:-

1. Commuters travelling to work in Leek, the Cornhill employment area and Britannia Building Society (located in the vicinity of the proposed Leek station location).
2. Inbound workers employed in the Leekbrook industrial areas. This would be mostly from Leek but with a number from the large villages of Cheddleton and Froghall/Kingsley, both of which have operational CVR stations.
3. Daytime visitors to Leek for shopping etc.

Following the connection to Stoke (including the Potteries generally and for access to main line services to London, Manchester and Birmingham), commuters, shoppers and students at the new Stoke Sixth Form College and Staffordshire University (both within the vicinity of Stoke

Station) will use these services. Road connections, particularly from Leekbrook, are very poor to Stoke.

Services from Leek via Leekbrook to Stoke are not likely to be operational for about 3 years.

4.3.1 Reconnecting Leek

The complete project comprises the extension of the Moorland and City Railways and Churnet Valley Railway line from Leekbrook to Leek. This will be carried out in two stages:

- Stage 1 – the proposed Leekbrook residential development, together with a small station facility, on MCR's surplus land at Leekbrook. This Transport Assessment covers this stage.

- Stage 2 - The development of a new station facility in Leek and its connection to the established rail network at Leekbrook by a new railway line.

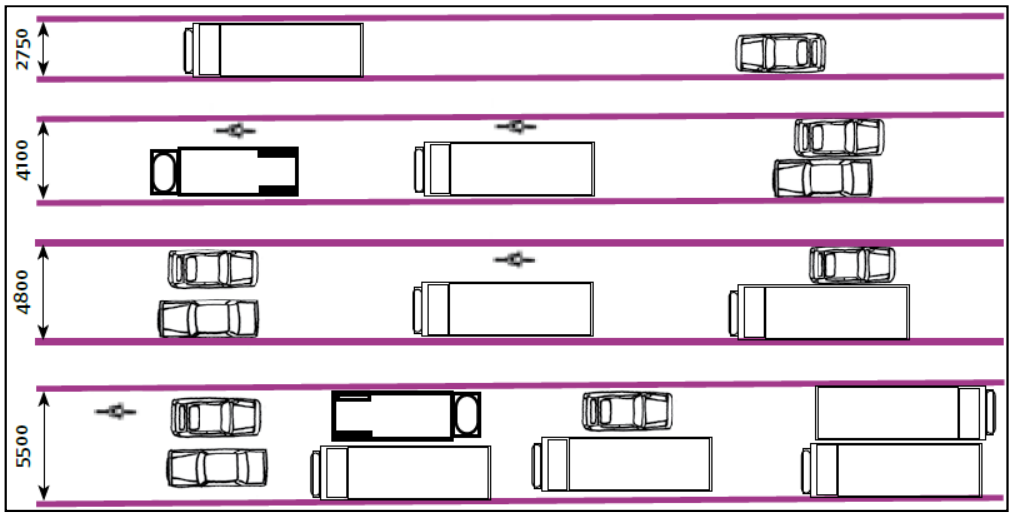
It is proposed that once the new track and railway infrastructure is complete, CVR heritage steam and diesel services along the Churnet Valley and Cauldon lines will start immediately. On completion of the rest of the MCR network, commercial services will run to Stoke on Trent and Alton Towers. It is intended to create a specific architectural style for this and other railway related development that will reflect, in modern terms, its railway heritage.

4.4 Access Arrangements

The proposed development site is to be accessed off Leekbrook Way. This would require extending Leekbrook Way to meet the existing track to gain access to the development site via the railway bridge. The road width leading to the bridge is shown on plan P7 contained in **Appendix C.**

According to the Manual for Streets, a road with a width of 4.1m allows the two-way movement of cars to pass one another as shown in Figure 4.2 below.

Figure 4.2 – Carriageway Width Extract from Manual of Street



As shown on plan P7, the access road is above 4.1m wide leading to the bridge and this width falls below 4.1m underneath the bridge for a limited section of around 9m in length. As a result of the width restriction underneath the bridge, it is proposed to introduce a one-way section of priority working through this small constraint. This would allow vehicles exiting the site to have priority over vehicles entering the site, if two cars should meet one another at that location.

The plan in **Appendix D** shows how this will be arranged, with signage and markings indicating the one-way feature and the give-way waiting areas. The plan shows the inter-visibility between the two areas through the section of proposed one-way working is good.

The railway bridge would provide a 'gateway' feature at the site access road entrance, the feature helps reinforce the idea to drivers that they will be entering a shared surface environment, thereby encouraging a shift in the user hierarchy between vehicles, pedestrians and cyclists, and a corresponding change in driver behaviour.

Underneath the railway bridge, it is proposed to include road markings to help channelize vehicular traffic towards the centre of the carriageway, further away from the bridge abutments and wall. The total available carriageway width underneath the railway bridge is approximately 2.8m kerb-to-kerb, therefore, by creating a 'perceivable' carriageway width of around 2.75m width underneath the bridge (i.e. between the proposed markings), this would be satisfactory under manual for street suggestions for a single lane shown on the previous page in Figure 4.2.

The track surface underneath the bridge will be upgraded without raising the existing alignment, and proper drainage will be constructed as part of the overall site drainage system to resolve the issue of standing water.

4.5 Access Road

The current alignment off the access route will be retained but a link will be constructed which will connect with the existing Leekbrook Way providing an access road to the development. Ownership of the land required to undertake this diversion is with the council. Therefore, the proposal does not envisage the use of any third party land. Details are provided in the Access Options Report contained in **Appendix E.**

Gaining access to the proposed development site via Leekbrook Way would also provide an opportunity for the unlocking of land for future development adjacent to the proposed car park.

In addition, the surface of Leekbrook Way is of a poor quality; it is understood that the Highway Authority will resurface Leekbrook Way as part of their ongoing maintenance.

Leekbrook Way currently gives access to an industrial estate with significant on street parking which needs to be addressed; see Figure 4.3 overleaf.

Figure 4.3 – On Street Parking along Leekbrook Way

There is however, the opportunity for the on street parking to be mitigated by constructing a car park adjacent to the industrial unit which currently occupies Falco and Staffordshire Moorlands Fencing Contractors and introducing a Traffic Regulation Order (TRO) restricting on street parking. A proposed car park would offset the loss of on street parking thereby improving access to the proposed development site.

4.6 Parking

Proposals for the new train station in the northwest of the site include six car parking spaces plus three DDA compliant spaces. Proposals for the 89 dwellings include associated parking; however, the finer details of this proposal are yet to be confirmed.

4.7 Service / Delivery Strategy

The internal site layout is designed to accommodate servicing vehicles, however the main issue remains the restricted carriageway width and height underneath the railway bridge. Further detail on this issue is provided below.

4.7.1 Fire and Rescue Services

The Staffordshire Fire and Rescue Service has been consulted and have carried out an independent investigation to check if both the standard fire appliance and the high reach vehicles (Ariel Ladder Platform) could go through the bridge.

At present the standard fire appliances and the high reach vehicles (Ariel Ladder Platform) used by the Staffordshire Fire and Rescue Service can get through the bridge. A demonstration of this is shown in Figure 4.4 overleaf.

Figure 4.4 – Ariel Ladder Platform Fire Appliance within Bridge

4.7.2 Refuse Vehicles

Consultations are underway with the local authority regarding the access to the site by the current fleet of refuse vehicles. In case evidence comes to light that they are unlikely to serve the proposed development, the developer is prepared to make alternative arrangements with a private operator to satisfy the local authority. This issue can be dealt with at the reserved matters stage.

4.7.3 Bridge Maintenance

Bridge maintenance works are likely to be planned to minimise disruption and to largely avoid preventing access to the site. Maintenance works could be carried out over night using a cherry picker type vehicle which could be moved in the event of emergency access being required. It is also intended that a full bridge inspection and any major works to the bridge carried out prior to the development of the site.

4.8 Public Consultation

Public consultation took place in Leek town centre from the 13th November for a three day period. Feedback from the consultation is detailed in the Public Consultation report submitted with the planning application pack.

5. Sustainable Transport Appraisal

5.1 Sustainable Accessibility

Sustainable forms of travel such as bus, train, cycling and walking can help reduce the trip impact of a development on the local highway infrastructure and form part of the developments' green credentials.

5.2 Local Footpath Network

Walking is the most sustainable mode of transport. The Institute of Highways and Transportation in their document 'Guidelines for Providing for Journeys on Foot' state that "walking accounts for over a quarter of all journeys and four fifths of journeys less than one mile". It also states that the suggested recommended walking distance is 400m, however, 800m is acceptable and 1,200m is the preferred maximum. An average walking speed of approximately 1.4 m/s can be assumed, which equates to approximately 400m in five minutes or three miles per hour.

To the north of the site, the former trackbed footpath runs from the highway system south of Morrisons supermarket along the track formation to just north of Birchall tunnel and then disappears into nowhere to the west of the tunnel mouth. Plans showing the local footpath network are contained in **Appendix F.** Figure 5.1 below displays a 1,200m isochrone from the proposed development.

Figure 5.1 – Walking Isochrone

The land on which the existing footpath from Morrisons lies, is owned by the District Council and the footpath is discretionary. Presumably, this is why it does not appear on the definitive map. In reality, most users of this path carry on through the tunnel, onto and across the application site which technically they have no right to do. The developer intends the footpath from Leek to continue to be used alongside the proposed single track new line. On that basis, there will be the opportunity for an acceptable route through the tunnel and the application site to connect with the site access road and out to the A520. This is a significant benefit of the scheme in both practical and railway terms as it connects the development site to Morrisons supermarket which is less than 2km away.

In addition, a 1,200m isochrone from the proposed development would encompass some local amenities including Leekbrook News and Off-Licence and the local petrol station and car garage on Cheadle Road are within reach as are both the Leekbrook and Basford Lane Industrial Estates (see Figure 5.1 above). Once Leekbrook Station is open, this will be within easy reach of the new proposed residential development, as will the shop which is located at the new train station. The isochrone also extends to south Leek as the development proposals include a footpath alongside the railway from the development site into Leek.

The topography of the local area is conducive to walking and therefore the level of walking associated with the development has the potential to be high providing there is adequate pedestrian infrastructure.

A footway will be provided along the new access road to link the development site with the A520 Cheadle Road via the existing footway along Leekbrook Way. In addition, pedestrian access can also be gained via Leekbrook Way through the industrial estate via the existing footpath linking Leekbrook Way to Leekbrook Junction (see Figure 5.2 overleaf). Alternatively, pedestrian/cycle access can be gained along the length of Leekbrook Junction (see Figure 5.3 overleaf).

Figure 5.2 – Footpath Linking Leekbrook Way with Leekbrook Junction

Figure 5.3 – Pedestrian / Cycle Access via Leekbrook Junction

As the railway will be single track, the current footpath alongside the former track bed south of Leek will be retained and extended through the Leekbrook triangle to connect with other footpaths south of Moorland and City Railways' land. The development proposals also include a cycleway and footpath alongside the railway from the development site into Leek.

To the south of the site, plans showing the footpath position are also provided in **Appendix F.** Some plans show footpaths in, for example, Soils Wood but as you can see, these are all unofficial.

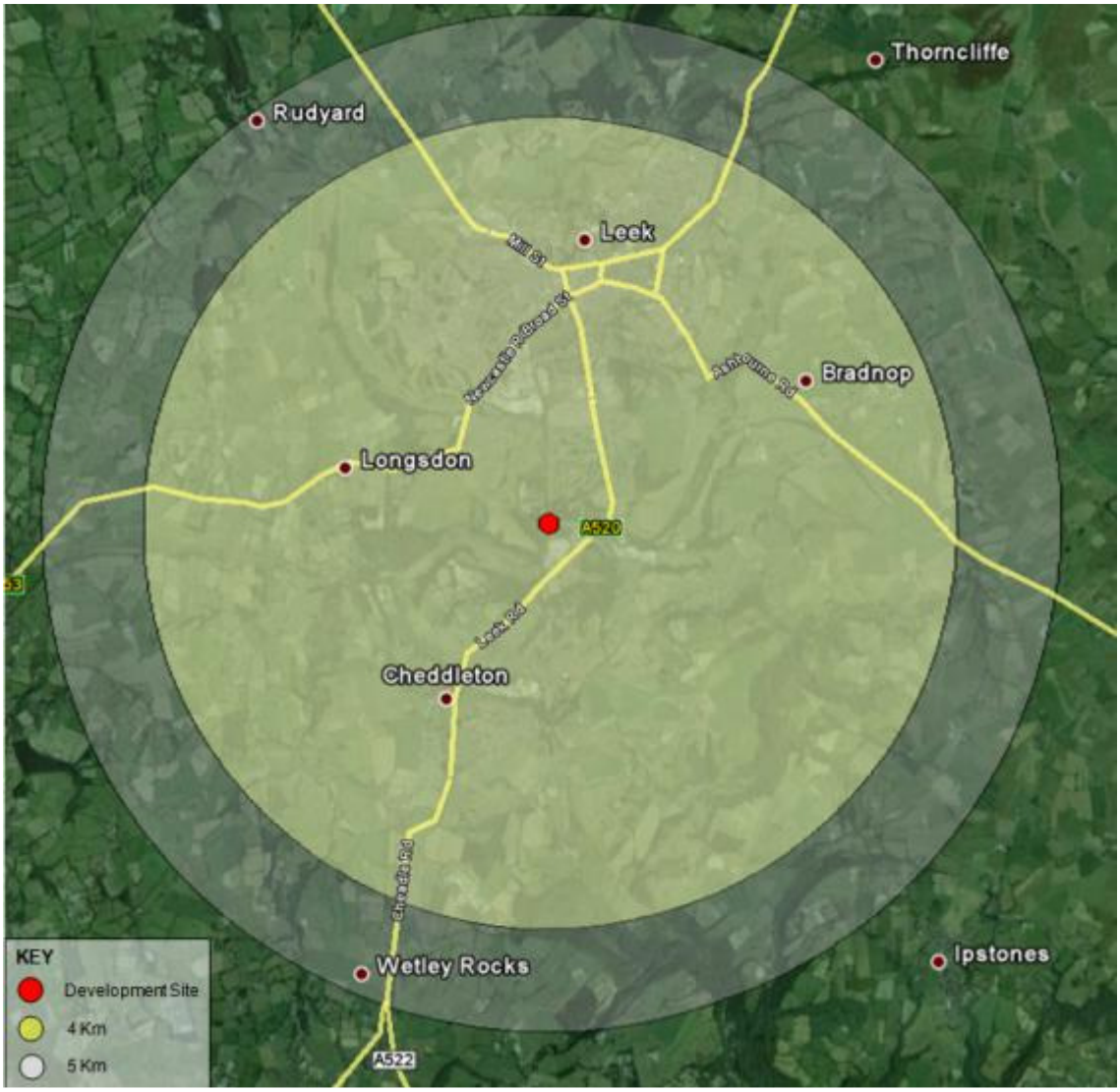
LW 606G shown in red has been applied for by the residents association of the St Edwards estate to the west of the proposed line. It proposes to make use of an unguarded private crossing of a railway line and is considered potentially highly dangerous. In practical terms therefore, there would not appear to be much that is possible south of the site.

5.3 Cycling

Cycling can provide increased benefits over walking as higher speeds of travel allow a greater distance to be travelled in the same time. PPG13 'A Guide to Better Practice' (2001) identifies that people are prepared to cycle up to 8km (5 miles). The DfT's 'Cycle Infrastructure Design' (July 2007) states that 'in common with other modes, many utility cycle journeys are over short distances under three miles (4.8km), although for commuter journeys, a trip distance of up to five miles (8km) is not uncommon).

It is therefore considered that a distance of 4km (2.5 miles) represents a reasonable cycling distance and that 8km (5 miles) is a maximum realistic range for cycle trips. A cycling 'crow flies' isochrones plan is presented in Figure 5.4 overleaf. The coverage includes the market town of Leek and the villages of Cheddleton, Longsdon and Bradnop.

Figure 5.4 – Cycling Isochrone (Crow Flies)



The topography of the area also helps to encourage the use of alternative modes of transport such as cycling, helping to promote sustainable travel modes and choices.

The surrounding road network includes provision of off-road cycle facilities along Cheadle Road (A520) from 0.2km south west of Wardle Gardens to 0.2km northeast of Wardle Gardens. See Figure 5.5 and Figure 5.6 overleaf for the cycle map around the development site showing existing cycle routes. A copy of the full Staffordshire County Council Cycling Map for the area can be found in **Appendix G**.

Figure 5.5 – Off Road Cycleway and Footway along Cheadle Road (A520)

Figure 5.6 – Cycle Map around Development Site

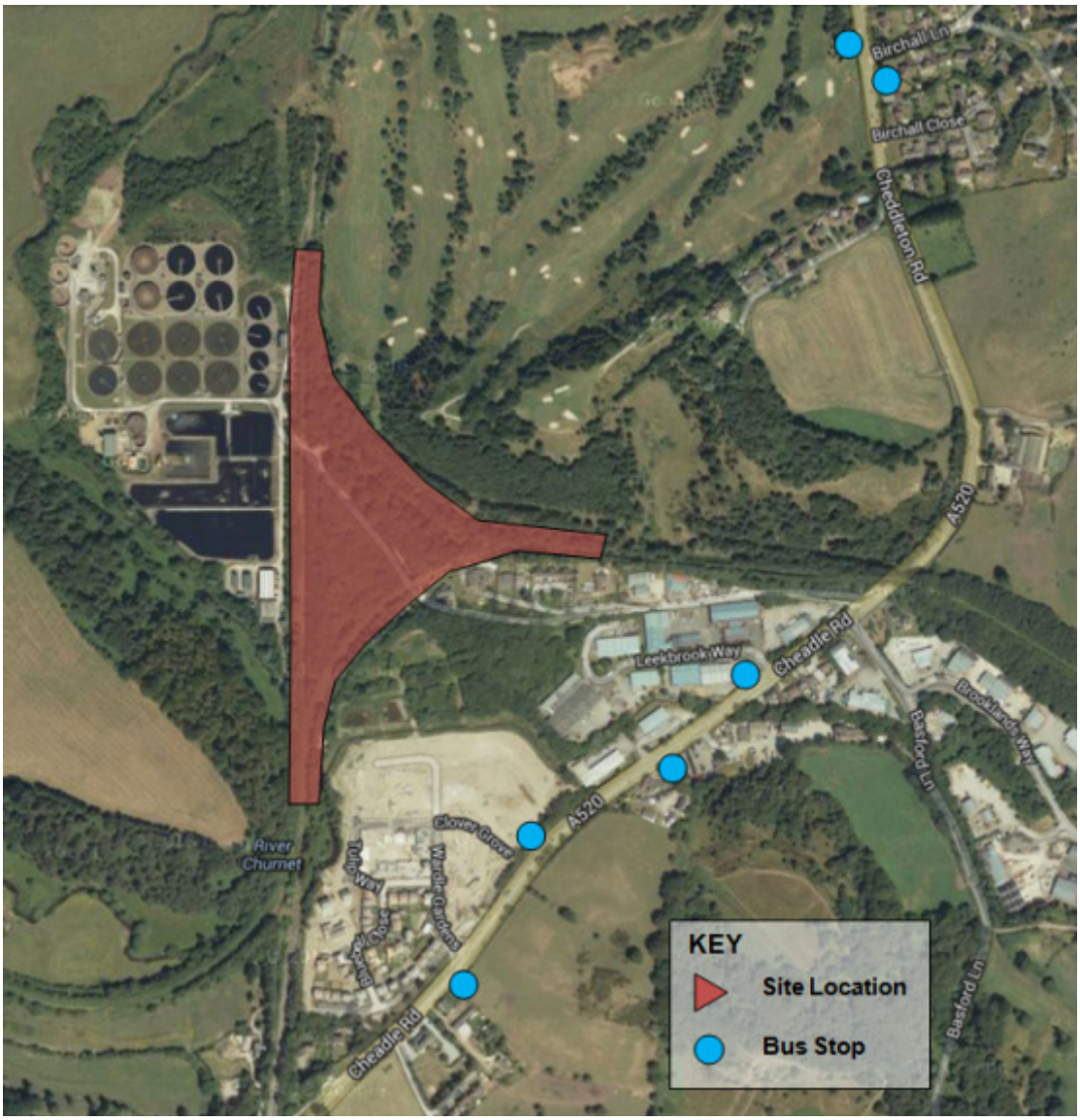
Source: Staffordshire County Council,
http://www.staffordshire.gov.uk/transport/walkingandcycling/maps/cyclemaps.aspx

5.4 Public Transport

The existing level of bus service provision has been assessed. Figure 5.7 overleaf illustrates the location of bus stops in the immediate area surrounding the site.

The Institute of Highways and Transportation (IHT) 'Planning for Public Transport in Developments' states that 'new developments should be located so that public transport trips involve a walking distance of less than 400m from the nearest bus stop'.

Figure 5.7 – Existing Bus Stop Locations



A number of bus stops are located within the vicinity of the site which includes the services detailed in Table 5.1 below. The nearest bus stops to the site in both directions are within 500m of the proposed development site.

Table 5.1 – Existing Bus Service Headways and Frequencies

Service Number	Headway	Frequency		
		Monday to Friday	Saturday	Sundays & Bank Holidays
10	Leek – Leekbrook – Cheddleton – Wetley Rocks – Cellarhead – Kingsley Moor – Kingsley – Woodhead – Cheadle – Oakamoor – Alton Towers	Three times a day	Three times a day	Three times a day
16	Hanley – Bucknall – Townsend – Ash Bank – Werrington – Cellarhead – Wetley Rocks – Cheddleton – Leekbrook – Barnfields – Leek	Every 60 mins	Every 60 mins	Every 120 mins
106	Leek – Leekbrook – Cheddleton – Wetley Rocks – Cellarhead – Werrington – Weston Coyney – Longton	Three times a day	No Service	No Service
463	Leek – Barnfields – Leekbrook – Cheddleton Heath – Cheddleton – Leekbrook – Barnfields – Leek	Once a day	No Service	No Service

Even though there are four bus stops within the vicinity of the site, there are a limited number of services and the frequency is considered to be quite poor.

5.5 Rail Service

Cheddleton Station is the closest railway station to the proposed development site, approximately two miles away; however, this is part of the Churnet Valley Heritage Railway line offering leisure trips. In the longer term, the wider aspiration for the Churnet Valley Railway (CVR) is to create the UK's biggest heritage railway network by expanding services into Leek and as far as Stoke. As far as commercial services are concerned, as soon as the new Leek and Leekbrook stations are operational, commuter/local services will be run between Leek and Froghall, stopping at Leekbrook as well as the currently operational CVR stations (Cheddleton, Consall and Froghall). These through services would eventually reach Stoke and Alton Towers when the lines to those locations are opened.

The nearest National Rail station to Leekbrook is Stoke-on-Trent which is approximately ten miles from the site. Other nearby stations are located at Buxton and Macclesfield which are 14 miles and 15 miles away respectively.

Stoke-on-Trent station, operated by Virgin Trains, provides services between Birmingham, Manchester and Crewe. Direct services are also operated to London Euston and Bournemouth.

The current train provision is considered to be good, with services to London Euston and Manchester Piccadilly every 20 minutes.

5.6 Framework Travel Plan

In line with Staffordshire County Councils 'Guidelines for Transport Assessments and Travel Plans', the following measures will be carried out:

- New home owners will be given an information pack containing information on existing public transport and emerging information on rail services where appropriate.
- In addition, information and maps will be provided relating to existing walking and cycling routes and the new routes to be created into Leek from the development site.

5.7 Summary

This section has shown that sustainable modes of travel can form viable alternatives to car travel to and from the proposed development. The pedestrian infrastructure adjacent to the highway network and crossing facilities are of a good quality and would encourage journeys on foot throughout the catchment area. Off highway footpaths/cycle paths have good surfaces are well lit and would also encourage walking and cycling to the proposed development.

The development is not well served by public transport, however, the inclusion of a new rail station and the associated services (likely to arise as a consequence of the implementation of the proposed development) will significantly improve the potential for rail to form part of a wider journey if required.

6. Traffic Impact Assessment

6.1 Introduction

The current section seeks to investigate the likely impact of the proposed development on the surrounding highway network and the junctions in the proximity of the site. In order to determine the predicted impact of the development proposal on the local highway network, the expected trip generation for vehicles arriving and departing from the site has been calculated. Person trips have also been calculated along with their modal split percentages (vehicles, public transport, walking and cycling users).

According to the 'Guidance on Transport Assessment' paragraph 2.11, a threshold of 30 two-way peak hour additional vehicular trips on any link at a junction should trigger the need for a more detailed assessment at that junction.

6.2 Traffic Impact Assessment

The proposed peak hour traffic flow to be generated by the site has been calculated based on trip rates produced when interrogating the TRICS database 2013(b) v6.12.1. For each part of the development the trip rates have been produced separately using parameter selections to provide a data set which includes sites of similar scale and location characteristics. These parameters are outlined below:

Parameters:

- Land Use: Residential; Houses Privately Owned
- Regions: Excludes sites in Greater London, Scotland, Wales and Ireland
- Weekdays to include: Tuesday to Thursday inclusive: the only days a survey has been undertaken
- Selected Locations: Suburban Area, Edge of Town, Neighbourhood Centre, Free Standing

The following tables represent the summarised outputs derived by the TRICS database based on 89 dwellings. The full TRICS outputs are provided within **Appendix H** and is summarised in Table 6.1 below.

It should be noted in advance that TRICS was used only for the residential element of this proposed development as there was not a suitable land use within TRICS that covers railway station developments.

Table 6.1 – Vehicular Trip Rates

Number of Vehicles						
Average Value	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
	16.45	51.92	68.37	41.44	24.30	65.74

Based on the average trip rate values the proposed development will produce 69 and 66 two-way vehicular trips in the morning and evening peak period respectively; as illustrated in Table 6.1 above.

In order to determine the total effect of the proposed residential development on the local transport network, the TRICS database has been used to calculate modal split percentages to distribute the predicted trips. As shown in Table 6.2 below, when considering the 89 proposed dwellings, the total predictions for people movements in the AM and PM peaks are 89 and 78 respectively.

Table 6.2 – Multi-Modal Split Produced by TRICS

Modal Split	AM Arrivals	AM Departures	Totals	PM Arrivals	PM Departures	Totals
Total People	**19.31**	**69.62**	**88.93**	**49.75**	**27.68**	**77.43**
Vehicle Occupants	16.45	51.92	**68.37**	41.44	24.30	**65.74**
Public Transport	2.86	1.95	**4.81**	1.29	0.00	**1.29**
Pedestrians	0.00	15.12	**15.12**	7.01	2.71	**9.73**
Cyclists	0.00	0.63	**0.63**	0.00	0.66	**0.66**

Of these 89 and 78 peak hour trips in the AM and PM peak respectively; 69 trips in the AM peak and 66 trips in the PM peak are made by vehicular occupants (assuming single car occupancy), 16 trips in the AM peak and 10 trips in the PM peak are made by pedestrians with the remainder of trips being made by public transport or cyclists.

In light of this it is proposed to undertake a detailed assessment of the junction of Leekbrook Way and Cheadle Road (A520).

6.3 Junction Assessments

6.3.1 Junction of Leekbrook Way and Cheadle Road (A520)

The Leekbrook Way / Cheadle Road junction has been identified as requiring a capacity assessment. This junction will be used by all vehicle trips to and from the proposed development site; therefore, the development will impact on this junction the most. Figure 6.1 overleaf shows the location of the junction which has been assessed.

Figure 6.1 – Junction to be assessed due to the Proposed Development

The access road to the site takes the form of a three arm priority junction between Leekbrook Way and the A520 Cheadle Road. This junction provides both access and egress and accommodates vehicles entering and exiting the existing industrial estate.

6.4 Modelled Scenarios

To provide a robust assessment of the development proposals, 2012 has been used as the base year assessing the existing operation of the examined junction. A 'Do Minimum' scenario has been assessed, which only includes the base year plus background traffic growth (no development) for the year of opening 2015 and the future year 2020. A 'Do Something' scenario has also been tested which consists of the base year plus background growth together with the proposed development generated trips; also for the year of opening 2015 and the future year 2020.

Junction analysis has been undertaken using the JUNCTIONS 8 (8.0.1.305) computer program which contains a PICADY module software package. The PICADY module is used to predict capacities, queue lengths, delays and accident risk at priority junctions. The main indicator of performance is the RFC value; this value is ratio of demand to capacity for the junction. A value of 0.85 is generally considered to represent capacity rather than a value of 1; this is to allow for daily and seasonal traffic variations which may occur. However, the RFC value is not always the best indicator of performance at a junction and therefore both the delay per PCU and queue length will be analysed when discussing junction performance.

All models have been constructed and calibrated in accordance with the JUNCTIONS 8 user manual; this includes all geometries and traffic flow inputs.

Detailed model outputs for the various scenarios are presented in **Appendix I**. However, a summary is provided in the following section:

6.4.1 Future Year Operation – Outputs

To model the junction using PICADY, AADTs were obtained from Staffordshire County Council (see **Appendix J**) along the A520 Cheadle Road south of Leekbrook Way showing the volume of traffic flows in each direction as well as vehicle type. The percentage of OGVs was derived from this data to be 2.5%.

Trip generation for Leekbrook Way Industrial Estate was then calculated in TRICS using the site area of 2.27 hectares to determine the total effect of the industrial estate on Leekbrook Way / Cheadle Road junction. The parameters used are outlined below:

Parameters:

- Land Use: Employment; Industrial Estate
- Regions: Excludes sites in Greater London, Scotland, Wales and Ireland
- Weekdays to include: Tuesday to Thursday inclusive
- Selected Locations: Suburban, Edge of Town, Neighbourhood Centre, Free Standing

The number of cars and OGVs were calculated then converted into PCUs; as illustrated in Table 6.3 below. The full TRICS outputs are provided within **Appendix H**.

Table 6.3 – Vehicular Trip Rates in PCUs

Time	Total Arrivals	Total Departures	Total Trips
07:00-08:00	17	8	25
08:00-09:00	27	10	37
09:00-10:00	21	13	35
10:00-11:00	17	16	33
11:00-12:00	19	19	39
12:00-13:00	15	19	34
13:00-14:00	17	16	33
14:00-15:00	16	15	31
15:00-16:00	13	15	28
16:00-17:00	12	26	38
17:00-18:00	6	23	29
18:00-19:00	2	10	13

In addition, using the total volume of vehicles obtained from the AADT data provided by Staffordshire County Council, the number of OGVs was calculated along with the number of light vehicles; this was then converted into PCUs. The trips from the industrial estate were then distributed onto the A520 as part of the existing traffic along with the trips generated by the

residential development as shown in Table 6.1. Trips to and from Leekbrook Station were also added and the station car park was assumed to fill during the AM peak period and empty during the PM peak period (9 spaces). TEMPRO growth factors were then applied to the background traffic for through movements on the A520 for the year of opening 2015 and the future year 2020. The Leekbrook Way / A520 junction was then assessed in PICADY.

A summary of the PICADY modelling results for the 'Base Year' (2012), 'Do Minimum' (2015), 'Do Something' (2015), 'Do Minimum' (2020) and 'Do Something' (2020) scenarios showing the operation of the Leekbrook Way / A520 Cheadle Road junction in the AM and PM peaks is tabulated below in Table 6.4.

Table 6.4 – PICADY Results for Leekbrook Way / Cheadle Rd Junction

Stream B-A	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Base Year (2012)	0.02	14.77	0.02	0.05	14.34	0.05
Do Minimum (2015)	0.02	14.81	0.02	0.05	14.44	0.05
Do Something (2015)	0.16	17.31	0.14	0.13	16.21	0.12
Do Minimum (2020)	0.02	15.75	0.02	0.05	15.36	0.05
Do Something (2020)	0.17	18.61	0.15	0.14	17.37	0.13

Table 6.4 above indicates that the junction operates within capacity, with no problems or concerns in the AM and PM peak periods once the proposed development has been completed, or in the future year (2020).

The results show that no queues are expected to accumulate on any of the arms during the peak periods and the RFC values indicate that the junction is not close to its capacity (as the RFC value is significantly lower than 0.85). The traffic flow on the minor arm is very low, with a maximum of 62 vehicles departing in the am peak period (approximately one vehicle per minute).

6.5 Conclusion

As part of the development proposals, the likely impact of the proposed development on the local highway network and the Leekbrook Way junction has been examined. It has been demonstrated that after the scheme proposals, the Leekbrook Way / A520 Cheadle Road junction will continue to operate well within capacity and there will be an imperceptible delay on the approaches to the junction.

In addition, local trips will be taken off the surrounding highway network as there will be a new station and station facilities on the proposed development site and in the vicinity of the Wardle Gardens development. There may also be an opportunity in the future to create a pedestrian link between the Wardle Gardens development and the new Leekbrook Station.

Based on the modelling outputs, the impact of the development proposals on the local highway network would therefore be very low. In light of this, it is not proposed to examine mitigation measures for the examined junction.

7. Summary and Conclusions

7.1 Summary

This transport statement has examined site accessibility by different modes of transport and considered the scale of development proposals with respect to the potential for impact on the local road network and highway safety. An examination of transport policy has demonstrated that the development complies with current National and Local policy objectives.

The examination of sustainable transport modes and facilities has shown that sustainable modes of travel can form viable alternatives to car travel to and from the proposed development. The existing pedestrian infrastructure is of a good quality and would encourage journeys on foot throughout the catchment area. Off highway footpaths/cycle paths have good surfaces, are well lit and would also encourage walking and cycling to the proposed development. The development is not well served by public transport, however, the inclusion of the new rail station and the associated services as part of this planning application will significantly improve the potential for rail to form part of a wider journey if required.

The trip rates have shown the likely impact of the proposed development on the local highway network and the Leekbrook Way junction is low, with a minimal amount of additional trips per minute in the AM and PM peak periods. It has been demonstrated that with the proposed development, the Leekbrook Way / A520 Cheadle Road junction will operate well within capacity and there will be an imperceptible delay on the approaches to the junction. Based on the modelling outputs, the impact of the development proposals on the local highway network would therefore be very low.

The proposals to use Leekbrook Way as the access road to and from the development is considered appropriate given that the number of movements likely to be generated by the development proposals are low and the low number of recorded accidents.

A review of the local accident data for the previous three years demonstrates that the surrounding area close to the proposed development does not experience any unusual accident patterns. As such, the analysis of the accident details does not give any cause for concern.

7.2 Conclusion

It is considered that this transport assessment has demonstrated that the challenges presented by the sites constraints are not insurmountable. It has further been demonstrated that the development proposals will generate a low number of vehicular trips having a negligible impact on the local highway network.

Whilst the current levels of accessibility to the site are poor the development proposals will generate the funding required to support sustainable transport measures, improving connectivity and accessibility for the benefit of the Churnet Valley. These improvements include a new footway/cycleway, the reinstatement of the railway line to Leek and a new railway station to serve the Leekbrook community.